

**ABSTRACT**

5 The present disclosure relates that by modifying chip die dicing methodology to a U-groove profile from a V-groove profile by modifying the second etch step to be a dry etch instead of a wet etch results in a direct cost savings by eliminating a more expensive process step, as well as the need for stripping the developed photoresist layer. Furthermore, going to a U-groove profile accomplishes additional indirect and greater cost savings resulting from increased process throughput, improved yield, and reduced metal layer defects.

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